

CLAIMS:

1. A surface protecting adhesive film for a semiconductor wafer in which an adhesive layer is formed on one surface of a base film, wherein the adhesive layer comprises 100 weight parts of a polymer (A) having a functional group capable of reacting with a cross-linking agent and a temperature (T_a) in a range of from -50°C to 5°C at which $\tan \delta$ of a dynamic viscoelasticity of the polymer(A) is maximized , from 10 weight parts to 100 weight parts of a polymer (B) having a functional group capable of reacting with a cross-linking agent and a temperature (T_b) in a range of from more than 5°C to 50°C at which $\tan \delta$ of a dynamic viscoelasticity of the polymer(B) is maximized , and from 0.1 weight part to 10 weight parts of a cross-linking agent (C) having two or more cross-linkable functional groups in a molecule based on 100 weight parts of total amount of the polymers (A) and (B), wherein the thickness of the adhesive layer is from $5\text{ }\mu\text{m}$ to $50\text{ }\mu\text{m}$.
2. The surface protecting adhesive film for the semiconductor wafer according to claim 1, wherein a storage elastic modules (E') at 25°C of at least one layer of a base film is from 1×10^8 to 1×10^{10} Pa and thickness of the base film is from $10\text{ }\mu\text{m}$ to $120\text{ }\mu\text{m}$.
3. The surface protecting adhesive film for the semiconductor wafer according to claim 1 or claim 2, wherein polymers (A) and (B) are acrylic acid alkyl ester copolymers.
4. A protecting method for a semiconductor wafer comprising the steps of: applying a surface protecting adhesive film for the semiconductor wafer on a circuit-forming surface of the semiconductor wafer via an

adhesive layer thereof; grinding a non-circuit-formed surface of the semiconductor wafer; and peeling away the surface protecting adhesive film for the semiconductor wafer , wherein the surface protecting adhesive film for the semiconductor wafer according to claim 1 to 3 is used in the
5 protecting method for the semiconductor wafer.